UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XC054NM

Site Name: Very Shallow

Precipitation or Climate Zone: 14 to 18 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level plains to moderately sloping landscapes. It is normally found on the convex position of low ridges between deeper soils and swales. Slopes may range from 0 to 9 percent but are usually less than 5 percent. Direction of slope varies and is not significant. Elevation ranges from 3,550 to 4,300 feet above sea level.

Land Form:

1. Plain
2. Ridge
3. Swale

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	3,550	4,300
Slope (percent)	0	9
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is "semi-arid continental".

The average annual precipitation ranges from 14 to 18 inches. Variations of 5 inches, more or less, are common. Approximately 85 percent of the precipitation falls from April through October. Most of the summer precipitation falls in the form of high intensity-short duration thunderstorms, often accompanied by hailstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is 58 to 61 degrees F with extremes of 30 degrees F below zero in the winter to 110 degrees F in the summer.

The average frost-free season is 190 to 210 days. The last killing frost being in early to mid-April and the first killing frost being in late October to early November.

Temperature and rainfall both favor warm-season perennial plant growth. Occasionally an early spring or late fall storm will occur from a prolonged front. This, along with occasional spring and fall showers, allows the cool-season component to occupy an important part of this plant community. The vegetation on this site can take advantage of the moisture at the time it falls. Because of the soil profile, little moisture can be stored for any length of time. Strong winds blow from February through May from the south, which rapidly dries out the soil during a period critical to cool-season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	181	216
Freeze-free period (days):	203	238
Mean annual precipitation (inches):	14	18

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.37	0.45	22.0	56.6
February	0.35	0.49	25.8	62.0
March	0.44	0.68	31.5	69.0
April	0.62	1.05	39.6	77.0
May	1.67	2.10	49.4	85.5
June	1.89	2.63	58.4	92.8
July	2.15	2.75	62.1	93.6
August	2.41	2.95	60.7	91.9
September	1.88	2.63	53.9	85.9
October	1.31	1.73	42.6	77.1
November	0.51	0.57	30.5	65.3
December	0.42	0.60	23.1	58.1

Climate Stations:

				Period		
Station ID	291939	Location	Clovis, New Mexico	From: 11/24/10	To:	12/31/01
Station ID	292207	Location	Crossroads #2, New Mexico	From: 07/01/29	To:	05/31/01
Station ID	292854	Location	Elida, New Mexico	From: 05/01/14	To:	12/31/01
Station ID	294026	Location	Hobbs, New Mexico	From: 01/01/14	To:	12/31/01
Station ID	295617	Location	Melrose, New Mexico	From: 04/01/14	To:	12/31/01
Station ID	297008	Location	Portales, New Mexico	From: 01/01/14	To:	12/31/01
Station ID	298713	Location	Tatum, New Mexico	From: 06/01/19	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These are well-drained, very shallow soils over petrocalcic layers and hard, platy caliche layers. The surface textures are gravelly loam, fine sandy loam and gravelly fine sandy loam. The textures of the subsurface layers are fine sandy loam, loam, gravelly loam and gravelly fine sandy loam. The caliche and petrocalcic layers are normally at depths less than 10 inches. Permeability is moderate above the petrocalcic and caliche layers. The available water-holding capacity is moderate to high. The effective rooting depth is 10 inches or less. The very shallow petrocalcic and caliche layers hold water up, making is available to shallow rooted, rhizomatous and stoloniferous short and mid-grasses for short periods of time, followed by rapid drying of the soil. If unprotected by plant cover and organic residues, these soils become wind blown and easily eroded.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Loamy fine sand
2. Gravelly fine sandy loam
3. Loam
4. Fine sandy loam

Surface Texture Modifier:

1. Gravel
2.
3.

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): N/A
Subsurface Fragments <=3" (%Volume): 15 to 35
Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Very slow	Moderately slow
Depth (inches):	<10	>72
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	0.00	13.00
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	6	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
The potential plant community of this site has the aspect of short-grass plains grassland. It is composed largely of short and mid-grasses such as the gramas and buffalograss with lesser amounts of perennial forbs and a few scattered shrubs and half-shrubs. Response to dynamic climatic flux is exhibited by the annual grass and annual forb components, which fluctuate somewhat from year to year with the annual and seasonal variation in amount and distribution of rainfall.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	0 – 5%
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	15 – 25
Bare ground	15 – 25
Surface gravel	10 – 20
Surface cobble and stone	0
Litter (percent)	25 – 30
Litter (average depth in cm.)	1 – 3

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	273	449	624
Forb	46	75	104
Tree/Shrub/Vine	28	46	64
Lichen			
Moss			
Microbiotic Crusts			
Total	350	575	800

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOCU	Sideoats Grama	115 – 173	115 – 173
2	BOER4	Black Grama	115 – 140	115 – 140
3	BOGR2 BOHI2	Blue Grama Hairy Grama	115 – 173	115 – 173
4	BUDA	Buffalograss	18 – 29	18 – 29
5	SPCR	Sand Dropseed	18 – 29	18 – 29
6	ARIST	Threeawn spp.	6 – 18	6 – 18
7	MUTO2	Ring Muhly	6 – 12	6 – 12
8	TRIDE	Tridens spp.	6 – 12	6 – 12
9	HENE5 ELEL5 2GRAM	New Mexico Feathergrass Bottlebrush Squirreltail Other Grasses	12 – 29	12 – 29

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	SENEC MAPIG2	Groundsel spp. Cutleaf Haplopappus	12 – 29	12 – 29
11	PSCO2 GAPU ERIGE2	Paperflower Firewheel (Indian Blanket) Fleabane	12 – 29	12 – 29
12	CROTO CASSI	Croton spp. Senna spp.	6 – 18	6 – 18
13	SPHAE	Globemallow spp.	6 – 18	6 – 18
14	2FORB	Other Forbs	6 – 18	6 – 18

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	EPHED YUGL KRLA2	Ephedra spp. Small Soapweed Yucca Winterfat	18 – 29	18 – 29
16	GUSA2	Broom Snakeweed	12 – 29	12 – 29
17	OPPO	Plains Pricklypear Cactus	6 – 18	6 – 18
18	2SD	Other Shrubs	12 – 29	12 – 29

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: wolftail. Little bluestem, Arizona cottontop, fluffgrass, mesa dropseed, spike dropseed, sixweeks grama, creeping muhly and Hall's panicum.
Other shrubs that could appear on this site include: feather dalea, fourwing saltbush, mesquite and cholla cactus.
Other forbs that could appear on this site include: hoffmanseggia, plains blackfoot, milkweeds, silverleaf nightshade, locoweeds, bladderpod, mustards, Wright's buckwheat, curlycup gumweed and buffalobur.

Plant Growth Curves

Growth Curve ID **5504NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Short-grass plains grassland with minor components of forbs and shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, plains harvest mouse, hispid cotton rat, sparrow hawk, scaled quail, horned lark, mourning dove, meadowlark, prairie spadefoot toad, Texas horned lizard, western coachwhip snake and prairie rattlesnake.

Where associated with the playas interspersed throughout the site, lesser sandhill crane and long-billed curlew utilize the site during migration, and killdeer, Great Plains toad and green toad are resident. In the playas, desert shrimp and annual fresh-water clams hatch and spawn intermittently.

Swainson's hawk hunt over the site during the warmer months and the marsh hawk in the winter.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Arch	B
Kimbrough	D
Plotter	C
Posey	D
Potter	C
Sharvana	C
Slaughter	D
Stegall	C

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation, photography, quail and dove hunting, antelope hunting and predator hunting. During years of abundant spring moisture, this site displays a few showy wildflowers from May through July.

Wood Products:

The natural potential plant community of this site affords little or no wood products.

Other Products:

Grazing:

This site provides forage suitable for grazing during all seasons of the year, although the site in itself lacks cover and protection for livestock from winter storms. It is suitable for grazing by all classes of cattle and also by sheep where protection from, and control of, predators can be provided. This site, when in high condition is not well suited for goats due to the lack of woody browse which is highly preferred and constitutes a large portion of the goat diet. In general, cattle grazing will result in a decrease in palatable mid-grasses and forbs, with a corresponding increase in low-value grasses, unpalatable and poisonous forbs, and woody plants. Sheep grazing results in a decrease in palatable forbs, short-grasses, and mid-grasses with an increase in low-value grasses and woody plants. Grazing by goats will result in a decrease of woody vegetation and an increase in grasses. Continuous yearlong livestock grazing or grazing continually during the potential growing season will result in a decrease in the vigor and abundance of sideoats grama, black grama, winterfat, and Mormon-tea, with an increase in cactus, threeawn spp., other low-value grasses and brush. Eventually, wooly groundsel will increase and mesquite, catclaw and cholla cactus will invade. Well planned systems of deferred grazing by domestic livestock, which vary the season of grazing and rest in pastures during successive years, will result in a balanced plant community, providing high-quality forage and browse during all seasons of the year.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.3 – 4.0
75 – 51	3.8 – 5.1
50 – 26	5.3 – 8.3
25 – 0	8.3+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	D	P	P	P	D	D	D	D	D	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	P	P	P	P	P	P	D	D	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Mormon-tea	Ephedra viridis	L/S	D	D	D	D	D	D	D	D	D	D	P	P
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	P	P	P	P	P	P	D	D	D

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Senna	Cassia L.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	P	P	P	P	P	P	U	U	U
Indian Blanket	Gaillardia pulchella	EP	U	U	U	D	D	D	D	D	D	U	U	U
Other Annual Forbs	Various	EP	U	U	U	D	D	D	D	D	D	U	U	U
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	P	P	P	P	P	P	D	D	D
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	P	P	P	P	P	P	D	D	D
Buffalograss	Buchloe dactyloides	EP	D	D	D	P	P	P	P	P	P	D	D	D
Mormon-tea	Ephedra viridis	L/S	D	D	D	D	D	D	D	D	D	D	P	P
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	P	P	P	P	P	P	U	U	U
Croton	Croton spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Indian Blanket	Gaillardia pulchella	EP	U	U	U	D	D	D	D	D	D	U	U	U
Paperflower	Psilostrophe cooperi	EP	U	U	U	D	D	D	D	D	D	U	U	U
Cutleaf Haplopappus	Machaeranthera pinnatifida	EP	U	U	U	D	D	D	D	D	D	U	U	U
Broom Snakeweed	Gutierrezia sarothrae	L/S	D	D	D	D	D	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	U	D	D	D	U	U	U	U	U	U
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	U	D	D	D	U	U	U	U	U	U
Mormon-tea	Ephedra viridis	L/S	D	D	D	D	D	D	D	D	D	D	P	P
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites:

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Chaves, Curry, Lea, Roosevelt**

Latitude:

Longitude:

Township:

Range:

Section:

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description:

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Lea, Roosevelt & Curry.

Characteristic Soils Are:	
Arch, Kimbrough, Plotter, Posey, Potter	Sharvana, Slaughter, Stegall
Other Soils included are:	

Site Description Approval:

{PRIVATE}Author	Date	Approval	Date
Don Sylvester	06/05/80	Don Sylvester	06/05/80

Site Description Revision:

{PRIVATE}Author	Date	Approval	Date
Elizabeth Wright	02/05/03	George Chavez	2/24/03